

REMARKS

Claims 45 and 50-61 remain pending after the Office Action of October 19, 2006. Claims 45, 50, 52, and 55 have been amended. Claims 53, 54, and 61 have been cancelled. Reconsideration of the subject application is requested in view of these amendments and the following remarks.

I. Objection to Claim 55

Claim 55 was objected to for containing informalities. The claim has been amended in accordance with the Examiner's suggestion. It is thus requested that the objection to claim 55 be lifted.

II. Rejection of Claims 45 and 50-61 under 35 U.S.C. §112

Claims 45 and 50-61 were rejected under 35 U.S.C. §112 as indefinite. Claims 45, 55, and 60 have been amended to correct the unclear language pointed out by the Office Action. It is thus respectfully requested that the rejection of claims 45 and 50-61 be withdrawn.

III. Rejection of Claims 45 and 50-53 under 35 U.S.C. §102

Claims 45 and 50-53 have been rejected under 35 U.S.C. §102(e) over U.S. Published Patent Application No. 2002/0081714 to Jain et al. (hereinafter "the Jain reference"). Claim 45 has been amended to incorporate matter from claim 54, which contains matter not taught by the Jain reference. Claims 50-52 depend from claim 45. Claim 53 has been cancelled. It is thus respectfully requested that the rejection of claims 45 and 50-53 under 35 U.S.C. §102(e) be withdrawn.

IV. Rejection of claim 54 under 35 U.S.C. §103

Claim 54 has been rejected under 35 U.S.C. §103(a) over the Jain reference in view of Immunomagnetic Isolation of Magnetoferritin-Labeled Cells in a Modified Ferrograph by Maciej Zborowski et al. (hereinafter, “the Zborowski reference”). The subject matter of claim 54 has been incorporated into claim 45, so the discussion below focuses on the patentability claim 45 and its remaining dependent claims, 50-52, over the cited references.

Claim 45, as amended, recites a bioferrograph for identifying magnetically susceptible particles. A semi-conductor substrate includes a plurality of mutually parallel fluid outlets. At least one magnetic portion comprises two magnetic pole pieces disposed in physical communication with the semi-conductor substrate that extend across the plurality of mutually parallel fluid outlets as to magnetically manipulate magnetically susceptible particles into respective collection areas located within the plurality of fluid outlets. At least one sensor portion is in physical communication with the plurality of fluid outlets to detect the presence of the magnetically susceptible particles.

It is respectfully submitted that one skilled in the art would not seek to combine the teachings of the Zborowski reference with the teachings of the Jain reference to produce the system recited in claim 45. Specifically, the Jain reference teaches a method and apparatus for producing a randomly ordered array of magnetic beads. The system taught in the Jain reference seeks to trap a single particle (*e.g.*, a magnetic bead) at each of a number of gap regions within the array that are sized to entrap the particle. (*See, e.g.*, Jain, ¶0077, ¶0083-¶0085, Fig. 2).

The magnetic pole pieces recited in claim 45 extend across all of the plurality of parallel fluid outlets, such that that there would be no discrete gap regions in one direction

with which to define the array taught by the Jain reference. Magnetic particles would be trapped between the two pole pieces, but there would be no ordering force in the opposite direction, such that an ordered array could be achieved. Accordingly, it is respectfully submitted that the teachings of the Zborowski reference could not be incorporated into the system taught in the Jain reference without significantly changing the principle of operation of Jain. It is thus submitted that the cited references are not sufficient to render the claims *prima facie* obvious. See In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Claims 50-52 depend from claim 45, and are allowable for at least the same reasons. It is thus respectfully submitted that claims 45 and 50-52 define patentable invention over the Jain reference and the Zborowski reference.

V. Rejection of claims 55-61 under 35 U.S.C. §103

Claims 55-61 have been rejected under 35 U.S.C. §103(a) over the Jain reference in view of U.S. Patent 4,091,280 to Ellis et al. (hereinafter, "the Ellis patent"). Claim 55 has been amended to recite multiple collection areas and to incorporate the computerized quantification system of claim 65. It is respectfully submitted that claim 55, as amended, defines patentable invention over the cited references as neither the Ellis patent nor the Jain reference teach or suggest a computerized quantification system for correlating the detected luminosity at each collection area with a quantity of particles as recited in claim 55.

In rejecting claim 61, the Office Action cites a statement in the Jain reference that the grid-like pattern of the arrays used in Jain can be useful in data processing using existing image processing tools and software. It is respectfully submitted, however, that claim 55 now recites a quantification system that determines a number of a particles at each of a plurality of collection areas.

The Jain reference does not teach or suggest such a system, as it would be unnecessary in the Jain system. Jain produces a randomly ordered array of single particles from a series of gaps sized for single particles (*See, e.g.*, ¶0076 and 0077). The system disclosed in Jain is designed to ensure that the number of particles at a given collection area is always equal to one. (*See, e.g.*, Jain, ¶0077, ¶0083-¶0085, Fig. 2). One skilled in the art would not seek to incorporate the recited quantification system, as it would serve no purpose in light of the stated goals of the Jain reference. Ellis does not remedy this deficiency. Accordingly, it is respectfully submitted that claim 55 defines patentable invention over the cited art, and the withdrawal of the rejection of claim 55 is respectfully requested.

Claims 56-60 depend from claim 55, and are allowable for at least the same reasons. It is thus respectfully requested that the rejection to claims 56-60 be withdrawn.

VI. Double Patenting

Claims 45 and 50-52 were rejected on the basis of nonstatutory double patenting in light of U.S. Patent No. 6,623,984 (hereinafter, “the ‘984 patent”). Claim 45 has been amended to incorporate the subject matter of claim 54, which has not indicated as containing subject matter that lacked patentable distinctiveness over the ‘984 patent. Claims 50-52 depend from claim 45. It is thus respectfully requested that the double patenting rejection of claims 45 and 50-52 be withdrawn.

VII. Conclusion

In light of the amendment and remarks above, it is submitted that claims 45, 50-52, and 55-60 are allowable over the cited art, and allowance of the subject application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,



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